US EPA RECORDS CENTER REGION 5
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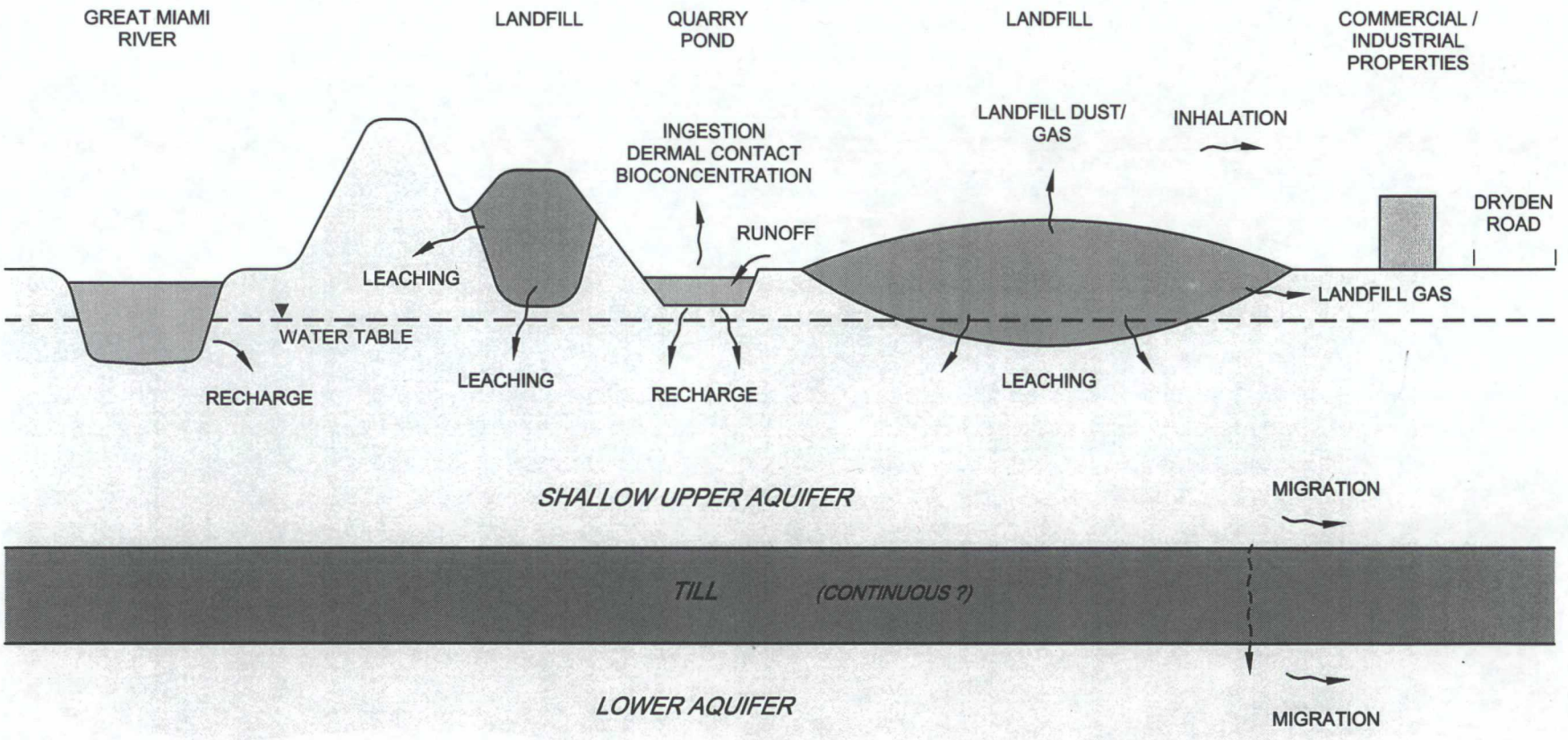

figure 3

CONCEPTUAL HYDROGEOLOGIC MODEL
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-00(002)GN-WA001 DEC 07/2005

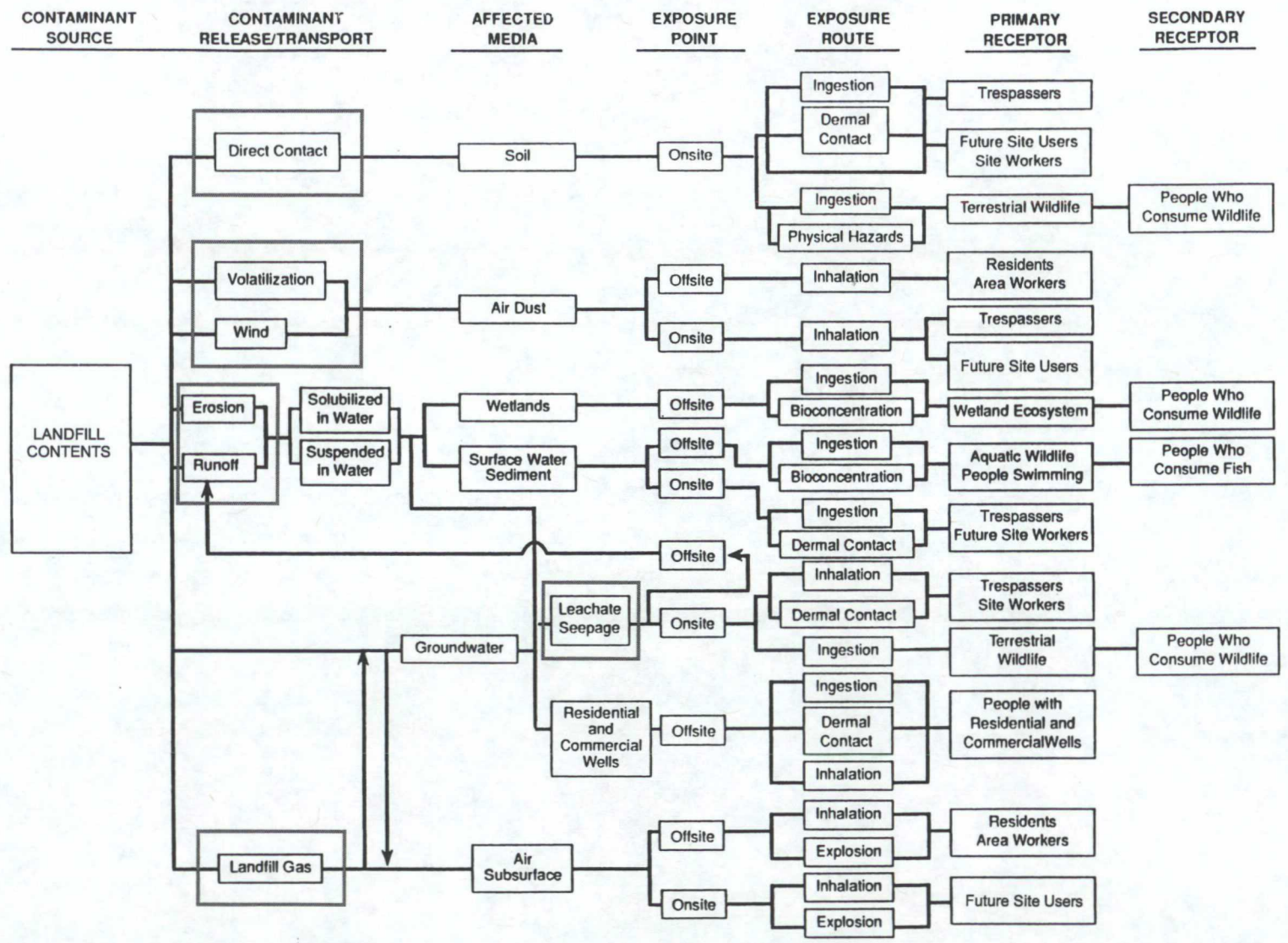

figure 4

CONCEPTUAL SITE MODEL
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

TABLE 1

POTENTIAL FEDERAL ARARs AND TBCs
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

	Law or Regulation	*Reference*	*Chemical Specific ARAR*	*Location Specific ARAR*	*Action Specific ARAR*	*Comments*
1.	CERCLA/SARA	42 USC 9601 et. seq.	Applicable or relevant and appropriate requirements under Section 121 of SARA	N/A	Applicable or relevant and appropriate requirements of 40 CFR 300.68 (NCP) and 40 CFR 300.415 (NCP)	Applicable or relevant and appropriate to both removal and remedial actions
2.	Safe Drinking Water Act (SDWA)	40 CFR 141	Regulates drinking water quality using MCLs and MCLGs	N/A	Applicable to groundwater and water which may be consumed after any treatment alternative	No potable well present. On-Site groundwater exceeds MCLs
3.	Worker Safety and Health Protection	Occupational Safety and Health Administration (OSHA) 29 CFR 1910	Worker safety during remedial investigations	N/A	Worker safety during remedial construction	Applicable to all sites
4.	Executive Order 12372	40 CFR 29	Requires state and local coordination and review of proposed EPA-assisted programs	N/A	Requires state and local coordination and review of proposed EPA-assisted programs	Applicable to all sites
5.	U.S. EPA National Primary Drinking Water Regulations	40 CFR 142	Regulates drinking water quality, using MCLs and MCLGs	N/A	N/A	No potable well present. On-Site groundwater exceeds MCLs
6.	Clean Air Act	National Ambient Air Quality Standards (NAAQS) - 40 CFR Part 50 National Emissions Standards for Hazardous Air Pollutants (NESHAPs) - 40 CFR Part 61 New Source Performance Standards (NSPSs) - 40 CFR Part 60	Regulates ambient concentrations and release of chemicals to air	N/A	N/A	Regulates ambient concentrations and release of chemicals to air
7.	Toxic Substances Control Act	40 CFR Part 761	Applicable to materials containing polychlorinated biphenyls (PCBs)	N/A	Applicable if materials containing PCBs are treated on site	Potentially applicable if PCBs are found to be present in the media at the site

TABLE 1

POTENTIAL FEDERAL ARARs AND TBCs
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

	Law or Regulation	*Reference*	*Chemical Specific ARAR*	*Location Specific ARAR*	*Action Specific ARAR*	*Comments*
8.	Executive Order 11990 Wetlands Protection Policy	40 CFR 6 Subpart A	N/A	Requires federal agencies to minimize destruction, loss or degradation of wetlands, and preserve and enhance natural and beneficial values of wetlands	N/A	Applicable if wetlands are next to or on the Site
9.	Clean Water Act (CWA) pertaining to wetlands	Section 404 CWA	N/A	Regulates impact on wetlands related to dredging and filling	N/A	Applicable if wetlands are next to or on the Site
10.	Fish and Wildlife Coordination Act	16 USC 661 1978 Improvement Act (16 USC 742A) 1980 Conservation Act (16 USC 2901)	N/A	Regulates remedial actions that affect bodies of water or pose potential harm to fish or wildlife. Mitigates impacts to wetlands	N/A	Potentially applicable or relevant and appropriate depending on final determination of presence of wetlands at the Site
11.	U.S. EPA's Groundwater Protection Strategy (1984)		N/A	Protects groundwater for its highest present or potential beneficial use	Protects groundwater for its highest present or potential beneficial use	Policy helps defines situations for which standards may be applicable or relevant and appropriate, helps set goals for groundwater remediation
12.	U.S. EPA Health Advisories	Review of Environmental Contaminants & Toxicology Vol. 106 225pp, 1989c	Guidelines developed for chemicals that may be intermittently encountered in public water supply systems	N/A	N/A	Guidelines are non-enforceable Considered as TBCs
13.	Health-Based Cleanup Objectives for Non-Carcinogens		Typically derived based on hazard quotient of 1.0 and chemical specific Reference Dose (RfD).	N/A	N/A	RfDs utilized in absence of MCLs to establish equivalent drinking water standards and considered as TBCs
14.	Health-Based Cleanup Objectives for Carcinogens		Objectives for known or suspect carcinogens typically derived based on target cancer risk level and application of chemical-specific Cancer Slope Factor (CSF)	N/A	N/A	CSFs utilized within development of MCLs and considered as TBCs
15.	RCRA Subtitle D	40 CFR 257	N/A	N/A	Sets standards for land disposal facilities for non-hazardous waste	Applicable to municipal landfills

TABLE 1

POTENTIAL FEDERAL ARARs AND TBCs
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

Law or Regulation	*Reference*	*Chemical Specific ARAR*	*Location Specific ARAR*	*Action Specific ARAR*	*Comments*
16. RCRA Subtitle C	40 CFR 260-267	N/A	N/A	Regulates the generation, transport, storage, treatment and disposal of hazardous wastes generated in the course of remedial action. Regulates the construction, design, monitoring, operating and closure of hazardous waste facilities.	Potentially applicable or potentially relevant and appropriate at sites where hazardous wastes are present
17. RCRA Land Disposal Restrictions (LDRs)	40 CFR 268	N/A	N/A	Prohibits placement of hazardous soils before or after treatment	Applicable or relevant and appropriate in some circumstances if remedial action involves unearthing, treating and re-disposing of hazardous waste.
18. RCRA MCLs	40 CFR 264.94	MCLs for 14 compounds, primarily metals and pesticides	N/A	N/A	Applicable or relevant and appropriate at sites where hazardous wastes are present

Notes:

(1) N/A - Not applicable
(2) TBC - To Be Considered

TABLE 2

PRELIMINARY LIST OF ALTERNATIVES
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

Alternative #	*Description*
1	• No Further Action
2	• Single-barrier cap • Monitored Natural Attenuation of groundwater • Surface runoff management • Institutional controls • Five-year review
3	• Single-barrier cap • Monitored Natural Attenuation of groundwater • Groundwater source area control - in-situ treatment • Surface runoff management • Landfill gas control - passive • Institutional controls • Five-year review
4	• Single-barrier cap and multi-layer cap over portions of the landfill • Monitored Natural Attenuation of groundwater outside the landfill area • Groundwater source area control; groundwater extraction treatment, discharge to surface water • Surface runoff management • Landfill gas control and treatment - active with treatment • Hot Spot excavation and off-Site disposal • Institutional Controls • Five-Year Review
5	• Single-barrier cap and multi-layer cap over portions of the landfill • Monitored Natural Attenuation of groundwater • Groundwater source area control; groundwater extraction treatment, discharge to surface water • Off-Site groundwater remediation - in-situ techniques • Surface runoff management • Landfill gas control and treatment - active with treatment • Hot Spot excavation, consolidation, capping • Institutional Controls • Five-Year Review

TABLE 3

DATA QUALITY OBJECTIVES - EXISTING ANALYTICAL DATA
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

DQO Level	*Description*	*Source of Existing Data*	*Data Acceptable for Use in RI*
I	Field screening or analysis; Lowest quality data with the fastest results; Generally qualitative, rather than quantitative; and Least costly option.	PSARA Technologies, Inc. (PSARA) for Ohio EPA Payne Firm, Inc. (PFI)	Yes
II	Field laboratory analysis; Use of portable analytical instruments or a on-Site mobile laboratory; and Good quality data with fast results.	N/A	N/A
III	Obtained by a commercial laboratory; Analyses does not usually use the validation or documentation procedures required of CLP Level IV analysis; Analyzed parameters are relevant to the design of the remedial action.	U.S. EPA Ohio EPA PSARA for Ohio EPA PFI	Yes - data will be flagged as historical
IV	Analyses performed in a CLP analytical laboratory; Data are used for risk assessment, engineering design, and cost-recovery documentation; Characterized by rigorous QC protocols, documentation, and validation.	N/A	N/A
V	Data obtained by nonstandard analytical procedures	N/A	N/A
Other	Data obtained from analyses of the physical properties of soil.	N/A	N/A

Notes:
N/A - Not Applicable

TABLE 4

SUMMARY OF PROPOSED INVESTIGATIVE ACTIVITIES
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

Data Gap	*Description of Data Need*	*Number and Type of Installation*
Lateral Extent of Waste and Type of Waste	• lateral extent of filling • types of fill • depth of fill	• geophysical investigation (20 acres) • 9 test trenches • 4 test pits
Surface and Subsurface Soil Quality	• surface and subsurface soil quality outside the limits of fill	• one surface soil sample and one subsurface soil sample at each new monitoring well or probe location
Leachate Quality	• impacts of infiltration on groundwater quality • evidence of leachate seeps	• hydrogeologic investigation • levee inspection
Hydrogeologic Characterization	• geologic characterization • vertical profiling • groundwater interface monitoring wells • lower aquifer water quality • source area characterization • downgradient upper aquifer water quality • downgradient lower aquifer water quality	• new monitoring wells • 5 vertical profiles • 3 new shallow wells • 3 new deep wells • 1 shallow source area well • 2 new shallow downgradient wells • 2 contingency deep wells
Surface Water and Sediment Quality	• recent data • Site drainage patterns	• 2 sediment and one surface water sample • Site survey
Landfill Gas	• off-Site migration potential	• 5 probes
Wetlands	• delineate wetlands on-Site	• wetland delineation
Geotechnical Information	• soil properties	• up to 5 samples for geotechnical analyses site survey

	SOIL					GROUNDWATER			SRFC WTR	SEDIMENT
	EPA RSLs [1]				Ecological Screening Levels [2]	EPA RSLs Tapwater	MCLS	Ecological Screening Levels [2]	Ecological Screening Levels [1]	Ecological Screening Levels [1]
	Direct Contact		Protection of Ground Water							
	Residential Soil	Industrial Soil	Risk-based SSL	MCL-based SSL						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	µg/L	mg/L	µg/L	mg/kg
Volatile Organic Compounds										
1,1,1-Trichloroethane									76	0.213
1,1,2-Trichloroethane	1.1	5.3	0.000077	0.0016	28.6				500	0.518
1,1,2,2-Tetrachloroethane						0.066	-	0.38	380	0.85
1,1-Dichloroethane	3.3	17	0.00068	-	20.1	2.4	-	0.047	47	0.000575
1,1-Dichloroethene	240	1100	0.093	0.0025	8.28				65	0.0194
1,2,4-Trichlorobenzene	22	99	0.0029	0.2	11.1					
1,2-Dichloroethane	0.43	2.2	0.000042	0.0014	21.2	0.15	5	0.91	910	0.26
1,2-Dichloroethene (total)	700	9200	0.037	-	-	130	-	-	-	-
1,4-Dichlorobenzene	2.4	12	0.0004	0.072	0.546	0.42	75	0.0094		
1,2-Dichloropropane									360	0.333
2-Butanone (Methyl ethyl ketone) (MEK)	28000	200000	1	-	89.6				2200	0.0424
2-Hexanone									99	0.0582
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	5300	53000	0.23	-	443				170	0.0251
Acetone									1700	0.0099
Benzene	1.1	5.4	0.0002	0.0026	0.255	0.39	5	0.114	114	0.142
Bromodichloromethane						0.12	80	-	-	-
Bromoform									230	0.492
Bromomethane (Methyl bromide)									16	0.00137
Carbon disulfide									15	0.0239
Carbon tetrachloride									240	1.45
Chlorobenzene	290	1400	0.049	0.068	13.1	72	100	0.047	47	0.291
Chloroethane									-	-
Chloroform (Trichloromethane)	0.29	1.5	0.000053	0.022	1.19	0.19	80	0.14	140	0.121
Chloromethane (Methyl chloride)									-	-
cis-1,2-Dichloroethene	160	2000	0.0082	0.021	-	28	70	-		
cis-1,3-Dichloropropene									-	-
Dibromochloromethane						0.15	80	-	-	-
Ethylbenzene	5.4	27	0.0015	0.78	5.16	1.3	700	0.014	14	0.175
Isopropyl benzene (Cumene)	2100	11000	0.64	-	-					
Methylene chloride	56	960	0.0025	0.0013	4.05	9.9	5	0.94	940	0.159
Naphthalene										
Styrene									32	0.254
Tetrachloroethene	22	110	0.0044	0.0023	9.92	9.7	5	0.045	45	0.99
Toluene	5000	45000	0.59	0.69	5.45	860	1000	0.253	253	1.22
trans-1,2-Dichloroethene	150	690	0.025	0.029	0.784					
trans-1,3-Dichloropropene									-	-
Trichloroethene	0.91	6.4	0.00016	0.0018	12.4	0.44	5	0.047	47	0.112
Vinyl chloride	0.06	1.7	0.0000053	0.00069	0.646	0.015	2	0.93	930	0.202
Xylenes (total)	630	2700	0.19	9.8	10	190	10000	0.027	27	0.433

	SOIL					GROUNDWATER			SRFC WTR	SEDIMENT
	EPA RSLs [1]				Ecological Screening Levels [2]	EPA RSLs Tapwater	MCLS	Ecological Screening Levels [2]	Ecological Screening Levels [1]	Ecological Screening Levels [1]
	Direct Contact		Protection of Ground Water							
	Residential Soil	Industrial Soil	Risk-based SSL	MCL-based SSL						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	µg/L	mg/L	µg/L	mg/kg
Semi-Volatile Organic Compounds										
1,2,4-Trichlorobenzene	22	99	0.0029	0.2	11.1					5.062
1,2-Dichlorobenzene										0.294
1,3-Dichlorobenzene										1.315
1,4-Dichlorobenzene	2.4	12	0.0004	0.072	0.546	0.42	75	0.0094		0.318
2,4,5-Trichlorophenol										-
2,4,6-Trichlorophenol										0.208
2,4-Dichlorophenol										0.0817
2,4-Dimethylphenol										0.304
2,4-Dinitrophenol										0.00621
2,4-Dinitrotoluene										0.0144
2,6-Dinitrotoluene										0.0398
2-Chloronaphthalene										0.417
2-Chlorophenol										0.0319
2-Methylnaphthalene	230	2200	0.14	-	3.24	27	-	0.33		0.0202
2-Methylphenol										0.0554
2-Nitroaniline										-
2-Nitrophenol										-
3,3'-Dichlorobenzidine										0.127
3-Nitroaniline										-
4,6-Dinitro-2-methylphenol										0.104
4-Bromophenyl phenyl ether										1.55
4-Chloro-3-methylphenol										0.388
4-Chloroaniline										0.146
4-Chlorophenyl phenyl ether										-
4-Methylphenol										0.0202
4-Nitroaniline										-
4-Nitrophenol										0.0133
Acenaphthene										0.00671
Acenaphthylene										0.00587
Anthracene										0.0572
Benzo(a)anthracene	0.15	2.1	0.01	-	5.21	0.029	-	0.000025		0.108
Benzo(a)pyrene	0.015	0.21	0.0035	0.24	1.52	0.0029	0.2	0.000014		0.15
Benzo(b)fluoranthene	0.15	2.1	0.035	-	59.8	0.029	-	0.00907		10.4
Benzo(g,h,i)perylene										0.17
Benzo(k)fluoranthene	1.5	21	0.35	-	148	0.29	-	-		0.24
bis(2-Chloroethoxy)methane										-
bis(2-Chloroethyl)ether										3.52
bis(2-Ethylhexyl)phthalate (DEHP)	35	120	1.1	1.4	0.925	4.8	6	0.0003		0.182
Butyl benzylphthalate (BBP)	260	910	0.2	-	0.239					1.97
Carbazole										-
Chrysene	15	210	1.1	-	4.73					0.166
Dibenz(a,h)anthracene	0.015	0.21	0.011	-	18.4	0.0029	-	-		0.033
Dibenzofuran	78	1000	0.11	-	-					0.449
Diethyl phthalate										0.295
Dimethyl phthalate										-
i-n-butylphthalate (DBP)										1.11
.-n-octyl phthalate (DnOP)										40.6

	SOIL					GROUNDWATER			SRFC WTR	SEDIMENT
	EPA RSLs [1]				Ecological Screening Levels [2]	EPA RSLs Tapwater	MCLS	Ecological Screening Levels [2]	Ecological Screening Levels [1]	Ecological Screening Levels [1]
	Direct Contact		Protection of Ground Water							
	Residential Soil	Industrial Soil	Risk-based SSL	MCL-based SSL						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	µg/L	mg/L	µg/L	mg/kg
Fluoranthene										0.423
Fluorene										0.0774
Hexachlorobenzene										0.02
Hexachlorobutadiene										0.0265
Hexachlorocyclopentadiene										0.901
Hexachloroethane										0.584
Indeno(1,2,3-cd)pyrene	0.15	2.1	0.2	-	109	0.029	-	0.00431		0.2
Isophorone										0.432
Naphthalene	3.6	18	0.00047	-	0.0994	0.14	-	0.013		0.176
Nitrobenzene										0.145
N-Nitrosodi-n-propylamine										-
N-Nitrosodiphenylamine	99	350	0.057	-	0.545					-
Pentachlorophenol	0.89	2.7	0.00036	0.01	0.119					23
Phenanthrene										0.204
Phenol										0.0491
Pyrene										0.195
Metals										
Aluminum										-
Antimony	31	410	0.27	0.27	0.142	6	6	0.08		-
Antimony (dissolved)						6	6	0.08		
Arsenic	0.39	1.6	0.0013	0.29	5.7	0.045	10	0.148		9.79
Arsenic (dissolved)						0.045	10	0.148		
Barium	15000	190000	120	82	1.04	2900	2000	0.22		-
Barium (dissolved)						2900	2000	0.22		
Beryllium	160	2000	13	3.2	1.06					-
Cadmium	70	-	0.52	0.38	0.00222					0.99
Calcium										-
Chromium										43.4
Cobalt	23	300	0.21	-	0.14	4.7	-	0.024		50
Copper	3100	41000	22	46	5.4					31.6
Iron	55000	720000	270	-	-	11000	-	-		-
Lead	400	800	-	14	0.0537	-	15	0.00117		35.8
Lead (dissolved)						-	15	0.00117		
Magnesium										-
Manganese	1800	23000	21	-	-	320	-	-		-
Manganese (dissolved)						320	-	-		
Mercury	10	43	0.033	0.1	0.1					0.174
Nickel	1500	20000	20	-	13.6					22.7
Potassium										-
Selenium	390	5100	0.4	0.26	0.0276					-
Silver	390	5100	0.6	-	4.04					0.5
Sodium										-
Thallium	0.78	10	0.011	0.14	0.0569	0.16	2	0.01		-
Vanadium										-
Zinc	23000	310000	290	-	6.62					121
PCBs										
Aroclor-1016 (PCB-1016)										-
Aroclor-1221 (PCB-1221)										-

	SOIL					GROUNDWATER			SRFC WTR	SEDIMENT
	EPA RSLs [1]				Ecological Screening Levels [2]	EPA RSLs Tapwater	MCLS	Ecological Screening Levels [2]	Ecological Screening Levels [1]	Ecological Screening Levels [1]
	Direct Contact		Protection of Ground Water							
	Residential Soil	Industrial Soil	Risk-based SSL	MCL-based SSL						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	µg/L	mg/L	µg/L	mg/kg
Aroclor-1232 (PCB-1232)										-
Aroclor-1242 (PCB-1242)						0.034	-	-		-
Aroclor-1248 (PCB-1248)										-
Aroclor-1254 (PCB-1254)						0.034	-	-		-
Aroclor-1260 (PCB-1260)						0.034	-	-		-
Pesticides										
4,4'-DDD										0.00488
4,4'-DDE	1.4	5.1	0.046	-	0.596					0.00316
4,4'-DDT	1.7	7	0.067	-	0.0035					0.00416
Aldrin										0.002
alpha-BHC	0.077	0.27	0.000036	-	0.0994	0.0062	-	0.0124		0.006
alpha-Chlordane										-
beta-BHC						0.022	-	0.000495		0.005
delta-BHC										71.5
Dieldrin	0.03	0.11	0.000061	-	0.00238	0.0015	-	0.000000071		0.0019
Endosulfan I										0.00326
Endosulfan II										0.00194
Endosulfan sulfate										0.0346
Endrin										0.00222
Endrin aldehyde										0.48
Endrin ketone										-
gamma-BHC (lindane)	0.52	2.1	0.00021	0.0012	0.005					0.00237
gamma-Chlordane										-
Heptachlor										0.0006
Heptachlor epoxide	0.053	0.19	0.000068	0.0041	0.152	0.0018	0.4	0.0000038		0.00247
Methoxychlor										0.0136
Toxaphene										0.000077
Dioxins/Furans										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.0000045	0.000018	0.00000026	0.000015	0.000000199					
General Chemistry										
Cyanide (total)	22	140	0.014	2	1.33					0.0001
Percent moisture										-
Total organic carbon (TOC)										-

Notes:

Chemicals of Concern
- - Not applicable.
[1] - United States Environmental Protection Agency Regional Screening Levels (RSL), November 2012
[2] - United States Environmental Protection Agency RCRA Ecological Screening Levels, August 22, 2003

[1] - An RSL is not available for 1,3-dichlorobenzene; the RSL for 1,4-dichlorobenzene was considered an evaluation surrogate for 1,3-dichlorobenzene.
[2] - An RSL is not available for cis-1,2-dichloroethene; the RSL for trans-1,2-dichloroethene was considered an evaluation surrogate for cis-1,2-dichloroethene.
[3] - An RSL is not available for cis-1,3-dichloropropene; the RSL for 1,3-dichloropropene was considered an evaluation surrogate for cis-1,3-dichloropropene.
[4] - An RSL is not available for trans-1,3-dichloropropene; the RSL for 1,3-dichloropropene was considered an evaluation surrogate for trans-1,3-dichloropropene.
[5] - United States Environmental Protection Agency Regional Screening Levels (RSL), November 2012
`] - The Soil Gas screening levels are based on the USEPA RSLs by applying the 'OSV ... nal Guidance for Assessing and Mitigating the Vapor ıtrusion Pathway from Subsurface Sources to Indoor Air' (USEPA, 2013) default "near-s ... ' exterior soil gas to indoor air attenuation factor of 0.03.

	USEPA Regional Screening Levels (RSLs) [5]							
	Residential Air	Industrial Air	Residential "Near-source" exterior soil gas [6]	Industrial "Near-source" exterior soil gas [6]	Residential Soil Vapor Screening Levels for Further Investigation		Residential Soil Vapor Screening Levels for Monitoring	
					Carcinogenic Target ELCR of 10^{-6} assuming DAF=0.1	Non-Carcinogenic Target HI of 0.1 assuming DAF=0.1	Carcinogenic Target ELCR of 10^{-5} assuming DAF=0.1	Non-Carcinogenic, Target HI of 1 assuming DAF=0.1
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
Volatile Organic Compounds								
1,1,1-Trichloroethane								
1,1,2-Trichloroethane								
1,1,2,2-Tetrachloroethane								
1,1-Dichloroethane	1.5	7.7	50	257	15	-	150	-
1,1-Dichloroethene								
1,2,4-Trichlorobenzene								
1,2-Dichloroethane								
1,2-Dichloroethene (total)								
1,4-Dichlorobenzene								
1,2-Dichloropropane								
2-Butanone (Methyl ethyl ketone) (MEK)								
2-Hexanone								
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)								
Acetone								
Benzene	0.31	1.6	10	53	3.1	31	31	310
Bromodichloromethane								
Bromoform								
Bromomethane (Methyl bromide)								
Carbon disulfide								
Carbon tetrachloride								
Chlorobenzene	52	220	1733	7333	-	52	-	520
Chloroethane								
Chloroform (Trichloromethane)	0.11	0.53	4	18	1.1	100	11	1000
Chloromethane (Methyl chloride)								
cis-1,2-Dichloroethene	63	260	2100	8667	-	63	-	630
cis-1,3-Dichloropropene								
Dibromochloromethane								
Ethylbenzene	0.97	4.9	32	163	9.7	1000	97	10000
Isopropyl benzene (Cumene)								
Methylene chloride								
Naphthalene	0.072	0.36	2	12	0.72	3.1	7.2	31
Styrene								
Tetrachloroethene	9.4	47	313	1567	94	42	940	420
Toluene								
trans-1,2-Dichloroethene								
trans-1,3-Dichloropropene								
Trichloroethene	0.43	3	14	100	4.3	2.1	43	21
Vinyl chloride	0.16	2.8	5	93	1.6	100	16	1000
Xylenes (total)	100	440	3333	14667	-	100	-	1000

	USEPA Regional Screening Levels (RSLs) [5]							
	Residential Air	Industrial Air	Residential "Near-source" exterior soil gas [6]	Industrial "Near-source" exterior soil gas [6]	Residential Soil Vapor Screening Levels for Further Investigation		Residential Soil Vapor Screening Levels for Monitoring	
					Carcinogenic Target ELCR of 10^{-6} assuming DAF=0.1	Non-Carcinogenic Target HI of 0.1 assuming DAF=0.1	Carcinogenic Target ELCR of 10^{-5} assuming DAF=0.1	Non-Carcinogenic, Target HI of 1 assuming DAF=0.1
	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Semi-Volatile Organic Compounds								
1,2,4-Trichlorobenzene								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
2,4,5-Trichlorophenol								
2,4,6-Trichlorophenol								
2,4-Dichlorophenol								
2,4-Dimethylphenol								
2,4-Dinitrophenol								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
2-Chloronaphthalene								
2-Chlorophenol								
2-Methylnaphthalene								
2-Methylphenol								
2-Nitroaniline								
2-Nitrophenol								
3,3'-Dichlorobenzidine								
3-Nitroaniline								
4,6-Dinitro-2-methylphenol								
4-Bromophenyl phenyl ether								
4-Chloro-3-methylphenol								
4-Chloroaniline								
4-Chlorophenyl phenyl ether								
4-Methylphenol								
4-Nitroaniline								
4-Nitrophenol								
Acenaphthene								
Acenaphthylene								
Anthracene								
Benzo(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(g,h,i)perylene								
Benzo(k)fluoranthene								
bis(2-Chloroethoxy)methane								
bis(2-Chloroethyl)ether								
bis(2-Ethylhexyl)phthalate (DEHP)								
Butyl benzylphthalate (BBP)								
Carbazole								
Chrysene								
Dibenz(a,h)anthracene								
Dibenzofuran								
Diethyl phthalate								
Dimethyl phthalate								
Di- 'ohthalate (DBP)								
Di- phthalate (DnOP)								

	AIR											
					Ohio Department of Health							
	Industrial Soil Vapor Screening Levels for Further Investigation		Industrial Soil Vapor Screening Levels for Monitoring		Screening Levels				Action Levels			
	Carcinogenic Target ELCR of 10^{-6} assuming DAF=0.1	Non-Carcinogenic Target HI of 0.1 assuming DAF=0.1	Carcinogenic Target ELCR of 10^{-5} assuming DAF=0.1	Non-Carcinogenic, Target HI of 1 assuming DAF=0.1	Residential		Non-Residential		Residential		Non-Residential	
	µg/m³	µg/m³	µg/m³	µg/m³	ppb	µg/m³	ppb	µg/m³	ppb	µg/m³	ppb	µg/m³
Volatile Organic Compounds												
1,1,1-Trichloroethane												
1,1,2-Trichloroethane												
1,1,2,2-Tetrachloroethane												
1,1-Dichloroethane	77	-	770	-	37	150	160	630	370	1500	1600	6300
1,1-Dichloroethene												
1,2,4-Trichlorobenzene												
1,2-Dichloroethane												
1,2-Dichloroethene (total)												
1,4-Dichlorobenzene												
1,2-Dichloropropane												
2-Butanone (Methyl ethyl ketone) (MEK)												
2-Hexanone												
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)												
Acetone												
Benzene	16	130	160	1300	4	10	20	40	40	100	200	400
Bromodichloromethane												
Bromoform												
Bromomethane (Methyl bromide)												
Carbon disulfide												
Carbon tetrachloride												
Chlorobenzene	-	220	-	2200	-	-	-	-	-	-	-	-
Chloroethane												
Chloroform (Trichloromethane)	5.3	430	53	4300	200	1000	800	4000	2000	10000	8000	40000
Chloromethane (Methyl chloride)												
cis-1,2-Dichloroethene	-	260	-	2600	88	350	370	1500	880	3500	3700	15000
cis-1,3-Dichloropropene												
Dibromochloromethane												
Ethylbenzene	49	4400	490	44000	600	3000	2500	13000	6000	30000	25000	130000
Isopropyl benzene (Cumene)												
Methylene chloride												
Naphthalene	3.6	13	36	130	7	36.7	29	152	-	-	-	-
Styrene												
Tetrachloroethene	470	180	4700	1800	60	400	250	1700	600	4000	2500	17000
Toluene												
trans-1,2-Dichloroethene												
trans-1,3-Dichloropropene												
Trichloroethene	30	8.8	300	88	4	20	20	100	40	200	200	1000
Vinyl chloride	28	440	280	4400	4	10	20	40	40	100	200	400
Xylenes (total)	-	440	-	4400	-	-	-	-	-	-	-	-

AIR												
					Ohio Department of Health							
	Industrial Soil Vapor Screening Levels for Further Investigation		Industrial Soil Vapor Screening Levels for Monitoring		Screening Levels				Action Levels			
	Carcinogenic Target ELCR of 10^{-6} assuming DAF=0.1	Non-Carcinogenic Target HI of 0.1 assuming DAF=0.1	Carcinogenic Target ELCR of 10^{-5} assuming DAF=0.1	Non-Carcinogenic, Target HI of 1 assuming DAF=0.1	Residential		Non-Residential		Residential		Non-Residential	
	µg/m³	µg/m³	µg/m³	µg/m³	ppb	µg/m³	ppb	µg/m³	ppb	µg/m³	ppb	µg/m³
Semi-Volatile Organic Compounds												
1,2,4-Trichlorobenzene												
1,2-Dichlorobenzene												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene												
2,4,5-Trichlorophenol												
2,4,6-Trichlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol												
2,4-Dinitrophenol												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
2-Chloronaphthalene												
2-Chlorophenol												
2-Methylnaphthalene												
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3,3'-Dichlorobenzidine												
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4,6-Dinitro-2-methylphenol												
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Acenaphthene												
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Butyl benzylphthalate (BBP)												
Carbazole												
Chrysene												
Dibenz(a,h)anthracene												
Dibenzofuran												
Diethyl phthalate												
Dimethyl phthalate												
Di-n-bu' alate (DBP)												
Di-n-oc alate (DnOP)												